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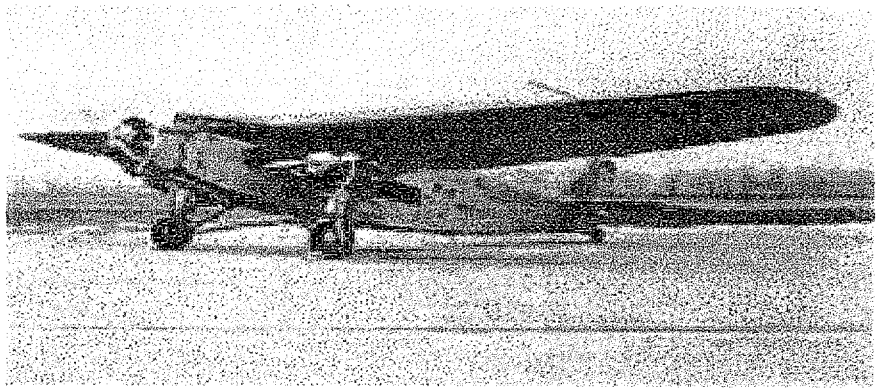


WINSLOW-LINDBERGH REGIONAL AIRPORT
Winslow, Arizona

AIRPORT MASTER PLAN - 1998
INTRODUCTION, BACKGROUND & INVENTORY

AIRPORT DEVELOPMENT: HISTORY AND BACKGROUND

This section of the Master Plan will provide a chronological history of the Winslow-Lindbergh Regional Airport (INW), based upon review of available records and documents compiled during an extensive inventory. A discussion of some of the historical factors which have had an impact upon the growth and development of INW is also included.

The Winslow Airport played an important role in the early days of aviation, functioning as a pioneering base for transcontinental airline travel and air mail service, as well as a training base for World War II pilots. In the years after the war, Winslow continued to function as a regional airline center, and also became a busy general aviation facility.

1903-1928: Factors Leading to the Development of Winslow-Lindbergh Regional Airport

On January 1, 1914, only a little more than ten years after the Wright brothers' first flight of a heavier-than-air machine in 1903, the first regular U.S. airline passenger service was inaugurated. Florida's *St. Petersburg-Tampa Air Boat Line* charged a one-way fare of five dollars for a 21-mile trip across Tampa Bay.

On May 15, 1918, the U.S. Post Office launched the first regular airmail service, on a New York - Philadelphia - Washington route, using military aircraft flown by Army pilots. On February 2, 1925 the U.S. Congress turned over the carriage of air mail to private carriers through the *Kelly Act*.

Section approved by PAC 03/17/98

In the early 1920's, the U.S. government was embarked on a plan to develop "highway airports" along the *National Old Trails Road* (Route 66). It was considered a matter of national security to have a cross-country system of highway and air access in place as soon as possible.

The first year-round airline passenger service was launched by *Ryan Airlines* on March 1, 1925. Prior to this, airline service was a seasonal endeavor. The route was between Los Angeles and San Diego.

Through the *Air Commerce Act of 1926* (May 20, 1926), Congress authorized the Department of Commerce to regulate air safety as well as to designate airways and build and maintain navigational aids (the first navigational beacons for night flight had already been installed with illumination of forty-two landing fields between Chicago and Wyoming in 1923).

On December 14, 1926, Ford Motor Company introduced the first aircraft designed primarily to carry passengers rather than mail. Called the *Ford Tri-Motor* because of its three engines, it was also known as the *"Tin Goose"* because of its revolutionary all-metal construction. The Ford Tri-Motor was essentially an all-metal version of the Fokker F.VII/3m. It could carry 15 passengers in its drafty and noisy cabin.

Soon after its introduction, it quickly made its mark on the fledgling airline industry. Transcontinental Air Transport (TAT), which was formed in 1928, purchased a fleet of Tri-Motors for use on its planned transcontinental airline service route.

1929: The Birth of the Winslow-Lindbergh Regional Airport

What is now known as Winslow-Lindbergh Regional Airport was originally called Barrigan Airport. It was constructed in 1929 by TAT to serve as one of twelve stopover points for its planned transcontinental service. The airport originally consisted of three unlighted asphalt runways, the present Terminal Building and Hangar, and an aircraft parking apron.

On July 7, 1929, TAT inaugurated coast-to-coast air and rail service from New York to Los Angeles.

The TAT transcontinental route was via Columbus, Indianapolis, St. Louis, Kansas City, Wichita, Waynoka, Clovis, Albuquerque, Winslow, and Kingman. TAT employed both air and rail to move passengers along this route. This combination train/plane system allowed faster air travel in the daytime and the comfort of Pullman sleepers at night. The legs between New York and Waynoka (northwest of Oklahoma City) were via Ford Tri-Motor. At the sundown arrival at Waynoka, the westbound passengers changed to a Santa Fe train with sleeping berths and a dining car. Upon reaching Clovis, New Mexico in the morning, the travelers boarded another Tri-Motor to cross New Mexico, Arizona and California. Winslow (Barrigan Airport) was

a regular stop for fuel, food and "comfort" services.

The inaugural flight of the new TAT route was piloted by Charles A. Lindbergh who had, only two years earlier, completed the first nonstop transatlantic flight in his *"Spirit of St. Louis"* Ryan aircraft. Lindbergh was then the technical advisor to TAT. He flew the first eastbound Tri-Motor from Los Angeles (Glendale), spent the night in Winslow, then took off in the first westbound aircraft, landed in Kingman and then returned to Los Angeles.

On October 1, 1930, TAT merged with Western Air Express, forming Transcontinental & Western Air, Inc. (T&WA), which in later years would become Trans World Airways (TWA). On October 25th of the same year, T&WA inaugurated the first all-air coast-to-coast service, lasting 36 hours, with an overnight stop in Kansas City.

By the early 1930's, airline travel was becoming a dynamic and rapidly changing industry. During 1933, nearly a half million people traveled by air in the United States. In late 1933, the first Douglas DC-1 was delivered to TWA and by 1935, the DC-2 was the premiere commercial service aircraft in use. 1936 saw the introduction of the DC-3, called "the airplane that changed the world". It was the first airliner to enable the airlines to carry passengers profitably without relying on airmail fees.

1941-1945: Winslow Army Airfield

At its entry into World War II, the United States was faced with the task of building an Armed Forces which would be capable of defeating the Axis nations on a worldwide battleground. At the beginning of the war, the U.S. Army, Navy, Marines and Army Air Forces had a total combined complement of only 2,167,000 people. During the war years, this would peak at 14,905,000. The Army Air Forces in 1941 had a total of 210,000 servicemen and only 2,500 airplanes. During the war, this would peak at 2,400,000 servicemen and over 80,000 aircraft.

As U.S. industry geared up to manufacture the equipment for war, the Army and Navy began an unprecedented training program. The government began the expansion of existing bases and the construction of new training bases all over the country. New training airfields required an abundance of good flying weather and "wide open spaces". The desert southwest and western plains states were a natural selection for this endeavor, and air bases were built throughout the southwestern states, including several locations in Arizona.

Existing airports were also utilized by the military during the war years. In 1941, the War Department expressed an interest in using the Barrigan Airport in Winslow as a bomber training base. Improvements would be needed to accommodate the intense activity, and TWA was directed to allow the U.S. government to make the improvements and use the airfield.

On January 13, 1941, the available airport property was expanded when the City of Winslow acquired 212 acres north of the original TAT/TWA property from the A.T. & S.F. Railroad. In May of 1941, TWA and the City of Winslow signed an agreement to allow the U.S. Government to further develop and improve the airport.

On May 16, 1941, TWA deeded the original 320 acres of airport land to the City of Winslow. During 1943, the property was further expanded by the acquisition of 118 acres from Calvin Boatwright, and an additional 119 acres from A.T. & S.F.

During the World War II years, the War Department constructed the existing layout of runways and taxiways, as well as most of the aprons. The three runways were lighted and drainage improvements were made. The Winslow airport served as a training facility throughout the war years.

1946-1978: The U.S. Airline Industry - Development and Deregulation

Scheduled airline service was still in its infancy after World War II. The Douglas DC-2, a machine that could carry about 20 passengers and fly from coast to coast in a little more than 13 hours, had been introduced only as recently as 1934.

During World War II, U.S. airlines established routes to support military operations and soon became the dominant world airline power. By the end of the war, the scheduled routes with the largest passenger volume within the United States were the routes from New York City to San Francisco and Los Angeles, and from New York to Chicago. The postwar availability of large numbers of former military transport aircraft (particularly the Douglas DC-3 and DC-4), along with a rising demand for air transportation, furthered the expansion of United States airline activity. During this period some 20 local service airlines were established, mainly operating DC-3s, to develop feeder services that connected with the major points on the trunk airline routes.

A major technological breakthrough occurred with the introduction of the turbine engine. The first successful flight of a turbojet aircraft took place in 1939. By 1960 United States airlines had Boeing 707, Convair 880, Douglas DC-8 turbojet, and Lockheed Electra turboprop aircraft in service.

A trend in the 1950's and 1960's toward increased size was continued in the 1970's with the introduction of the jets, an innovation that resulted in chronic congestion at many major airports. In 1970 the Boeing 747 was introduced into service. This first of the wide-bodied jets could seat as many as 500 tourist-class passengers. Its first competitors, the Lockheed 1011 and McDonnell Douglas DC-10, could each seat up to 400 passengers.

The United States government had, in 1938, established an agency to regulate civil aviation. The Civil Aeronautics Board (CAB) was directed to grant airlines

permission to fly specific routes and to charge certain fares. Throughout the 1960's and most of the 1970's, the U.S. airline industry was operating under this government-subsidized program, which guaranteed service on routes serving smaller communities.

The Airline Deregulation Act of 1978 reversed earlier policy. This legislation was meant to free the airlines from certain restrictions in order to encourage, through competition, an increased fare flexibility. Two stipulations of this act include the expiration of the CAB's power to assign specific routes to airlines and the cessation of its authority over the setting of domestic fares. The result of this was the demise of scheduled airline service to many smaller communities.

Winslow was served by TWA until some time in the early 1950's, when Frontier Airlines began providing service. Airline service to Winslow was terminated in the early 1980's and has not been re-established.

Present Use and Facilities: 1997 - Winslow-Lindbergh Regional Airport

Today, the Winslow-Lindbergh Regional Airport functions as a General Aviation facility, providing two paved and lighted runways, instrument approaches, and both 100LL and Jet-A aviation fuel service. Current hours of operation are from 7:00am until 5:00pm daily.

The U.S. Forest Service has a fire-control base on the airport, with intensive seasonal operations by modified Douglas DC-6 and Lockheed P-3 Orion class fire suppression bomber aircraft.

The airport is served by a Very High Frequency Omni Range / TACAN (VORTAC) station, which is located 4.3 miles northwest of the field. The VORTAC's frequency in 112.6.

Pattern altitudes for all aircraft have been established at 5,738' MSL. Standard left traffic patterns are used for both active runways. Traffic advisories and other advisory radio communications are on 122.8, the airport's Common Traffic Advisory Frequency (CTAF). Albuquerque Center can be contacted on 124.5, and Prescott Flight Service is available on 122.6.

The primary runway, Runway 11-29, is 7,102' X 150' with asphalt pavement and pilot-controlled lighting. Visual Approach Slope Indicators (VASI) have been installed on both ends of the runway. Runway 11 is equipped with Runway End Identifier Lights (REIL).

Runway 4-22 is 7,498' X 150' with asphalt pavement and pilot-controlled lighting. Runway 22 is equipped with VASI and REIL.

Automated weather is available from the on-site ASOS on 118.875, or by telephone at (520) 289-0134.

A VOR or GPS RWY 11 nonprecision instrument approach is available. This approach provides straight-in descent minimums to 400 feet AGL (5,320' MSL), with visibility minimums of 1 mile for Category A and B aircraft, and 1¼ miles for Category C and D aircraft.

There is presently no Fixed Base Operator (FBO) on the airfield. The closest aircraft repair services are located at Flagstaff, about 60 miles to the west on Interstate 40, and Holbrook, about 35 miles to the east.

The airport Terminal Building includes a restaurant.

Rental cars are available at the airport with a prior reservation.

The National Plan of Integrated Airport Systems (NPIAS)

The National Plan of Integrated Airport Systems (NPIAS) identifies 3,294 existing airports that are significant to U.S. air transportation and provides estimates of development costs for its 5-year planning period. The purpose of NPIAS development is primarily to bring existing airports up to current design standards and to add capacity to congested airports.

The Winslow-Lindbergh Regional Airport is included as a component of the NPIAS and, as such, is eligible to receive grants under the federal Airport Improvement Program (AIP).

The current NPIAS includes only projected numbers of based aircraft and estimated development costs for the 5-year planning period (1993-1997). For Winslow, 22 based aircraft are forecast by 1997, and $1,481,000 is programmed for development.

The current NPIAS role of the Winslow-Lindbergh Regional Airport is "General Aviation" (GA). A NPIAS GA facility is an airport with no scheduled airline service and at least 10 based aircraft. As a general rule, GA airports included on the NPIAS must be at least 30 miles from another NPIAS airport. The closest NPIAS airport to Winslow is Holbrook Municipal, 34 miles to the east along Interstate 40.

FAA Terminal Area Forecasts

The FAA Terminal Area Forecasts (TAF) includes operational data for 873 U.S. airports, mainly those with operating control towers.

The Winslow airport is included in the current TAF, which indicates that there were 10 based aircraft in 1991 and an estimated 28,000 total operations (24,000 Itinerant

and 4,000 Local operations). The TAF forecasts that the number of total operations at Winslow will increase to 39,000 by the year 2005 (33,000 Itinerant and 6,000 Local operations).

The TAF indicates that air carrier passenger enplanements in Arizona increased from 10.4 million in 1987 to 12.3 million in 1991, an 18% increase over five years. The TAF also forecasts that enplanements will continue to grow at the rate of about 5% per year through the year 2005.

Operations by scheduled airlines within Arizona increased from 295,000 in 1987 to 363,000 in 1991, a 23% increase over the five-year period. The TAF predicts that airline operations will continue to increase at the rate of about 3% per year through 2005.

The TAF indicates that total aircraft operations within Arizona increased from 1.8 million in 1987 to 2.1 million in 1991. This represents a 17% increase over five years. TAF forecasts indicate that total operations will continue to increase at the rate of about 3% per year through the year 2005.

This apparent health in the Arizona aviation economy will affect the future demands placed upon the Winslow-Lindbergh Regional Airport facility.

1988 Arizona Aviation System Plan and the 1995 State Aviation Needs Study

The 1988 Arizona Aviation System Plan indicated that there were 16 aircraft based at Winslow in 1987, and projected an increase to 21 based aircraft by 1997, then increasing to 29 by the year 2010. Total annual operations were estimated at 13,328 in 1987, and forecast to be 18,136 by 1997, increasing to 27,068 by 2010.

The 1995 Arizona State Aviation Needs Study (SANS) included updated projections of based aircraft for Winslow, indicating 13 based aircraft existing in 1995, and forecasting an increase to 14 aircraft by 2015. The 1995 SANS forecasts of general aviation operations indicates 20,539 annual operations in 1995, increasing to 22,119 operations in 2015.

The SANS includes three alternate capital improvement programs for the Arizona airport system.

Scenario A assumes that the 1995 funding level will remain unchanged for the 5- and 10-year periods. For the most part, only maintenance items were included in this alternate.

Scenario B presented a program which would accommodate projected growth in the aviation system, but not necessarily provide funding to bring all airports up to current standards for safety and capacity.

Scenario C provides for a condition in which all airports would be brought up to minimum development standards and improved such that they will meet forecast demand.

The following is a summary of the recommended SANS Scenario C improvements and estimates of cost for development at Winslow:

1995-2000	Provide 200' additional clearance between runway and taxiway	$ 50,000
	Construct pilot waiting area	45,000
	Install ASOS	130,000
	Prepare Airport Master Plan	83,000
	Remove pole, relocate fence & tower	4,750
	Grade, drain and surface access road and auto parking; design and site preparation for Terminal Building	250,000
	Grade, drain and surface Runway 4-22 and apron; surface Runway 11-29 (preservation)	905,000
	Pavement maintenance	4,258,100
2001-2005	Extend Runway 4-22 by 1,102 feet (8,600' x 150')	$ 165,300
	Widen parallel taxiway by 35' (8,600' x 75')	301,000
	Construct Terminal Building	400,000
	Pavement maintenance	4,346,000
2006-2015	Pavement maintenance	$ 8,874,000

Arizona Airport Activity Surveys: 1983 and 1985

The Arizona Department of Transportation, Aeronautics Division (ADOT/Aeronautics) commissioned two surveys of airport activity in the 1980's that

included inventories and traffic observations at Winslow.

The 1983 study, undertaken by the present consultant team, indicates that there were 31 aircraft based at Winslow in May of 1983 (27 single-engine and 4 twin-engine types). 31,400 total annual operations were estimated, including 400 annual helicopter operations and 500 annual jet operations. This study also indicates that 161,168 gallons of aviation fuel were dispensed at Winslow during 1982.

The 1985 study, which was undertaken by Bucher, Willis & Ratliff, indicates that 25 aircraft were based at Winslow and estimated 20,000 total annual operations, including 400 helicopter operations and 200 jet operations.

1979 and 1987 Winslow Municipal Airport Master Plan

In 1979, the original Winslow Municipal Airport Master Plan was prepared by Johannessen & Girand of Phoenix, Arizona. This study indicates that there were 37 aircraft based at Winslow in 1979, and estimated 19,425 total annual operations (12,025 Itinerant and 7,400 Local operations).

The 1987 Winslow Airport Master Plan, prepared by Carter Associates of Phoenix, Arizona, included updated forecasts of aeronautical activity at Winslow. There were 21 based aircraft in 1987 and an estimated 22,248 annual operations. The 1987 study forecast that annual operations would increase to 26,016 by 1997 (with 25 based aircraft), and 30,231 annual operations by 2006 (with 28 based aircraft).

The 1987 Master Plan recommended only a program of pavement maintenance, rehabilitation and reconstruction for the 1987 through 1999 planning period. No major airport improvements or expansions were recommended.

Approved Airport Layout Plan (1981)

The latest approved Airport Layout Plan (ALP) for the Winslow Municipal Airport (now Winslow-Lindbergh Regional Airport) was prepared during 1980 by Johannessen & Girand. The document was approved by the FAA on September 16, 1981 as the official ALP for the airport. No major long-range airport improvements, expansions or modifications are indicated on the 1981 approved ALP.

MAJOR ACTIONS RELATED TO WINSLOW-LINDBERGH REGIONAL AIRPORT

The following is a summary of the major airport improvement projects that have been undertaken over the years. Projects preceded by an asterisk (*) were FAA-funded. Projects with a double asterisk (**) also had participation by the Arizona Department of Transportation - Aeronautics Division (ADOT).

1929 Transcontinental Air Transport (TAT) constructed the original airport.

1941 The City of Winslow and TAT (now TWA) signed an agreement with the U.S. government to construct the present runway system.

1944 * Under AP-4 the runways were extended to their current lengths.

1948 The U.S. government transferred ownership of the airport to the City.

1959 The rotating beacon and beacon tower were installed.

1962 * Under FAAP-6202, medium intensity runway lighting was installed on Runway 11-29. The City of Winslow was released of responsibility for maintenance of Runway 17-35 and related taxiways (the runway was abandoned).

1963 * Under FAAP-C303, a new medium intensity runway lighting system was installed on Runway 4-22, and new electrical service was installed to the rotating beacon.

1971 ** Under ADAP Project Number 8-04-0052-01, Runway 11-29 was resurfaced and marked, security fencing was installed and a new lightweight crash and rescue fire truck was acquired.

1974 * Under ADAP Project Number 8-04-0052-02, portions of parallel and connecting taxiways and the terminal apron were overlaid.

1979 ** A seal coat was applied to Runway 4-22 under AFC Project Number 01800.

** The original Airport Master Plan was also prepared.

1980 ** Under ADAP Project Number 5-04-0052-03, the long term parking apron was constructed. Snow removal equipment was acquired, and a CFR water line was installed.

1983 * A VHF/DF (Direction Finder) facility was installed.

** The parallel taxiway serving Runway 4-22 was reconstructed under ADAP Project Number 6-04-0052-04.

1984 ** The parallel taxiway serving Runway 11-29 was reconstructed under ADAP Project Number 3-04-0052-02. Portions of the taxiways near the terminal was seal coated, and crack sealing was accomplished on Runway 11-29.

1985 ** Visual Approach Slope Indicators (VASI) were installed on Runway 29. VASI and Runway End Identifier Lights (REIL) were installed on Rwy 22.

** The transient aircraft parking apron was constructed under AIP Project

Number 3-04-0052-03.

1986 ** The 1987 Master Plan was prepared.

1997 A new above-ground aircraft fuel system and fuel service apron were constructed.

1997 ** This Master Plan was prepared.

1998 ** The Runway 11-29 and 4-22 Medium Intensity Runway Lighting (MIRL) and taxiway guidance sign systems were replaced. A new electrical vault was constructed and new equipment was installed (design was completed in 1997, concurrent with preparation of the Master Plan).

INTRODUCTION: INVENTORY OF EXISTING AIRPORT FACILITIES

This section of the Master Plan will provide a baseline record of the general condition of the various airport facilities at the Winslow-Lindbergh Regional Airport (INW).

The condition of the facilities was determined by engineering and architectural investigations and surveys at INW conducted during July of 1997. Specific investigations were made to determine the condition of the airport's existing pavements, buildings, drainage, fencing, and utilities.

The investigations included research of available record plans and documents as well as field surveys. Field surveys were conducted in order to establish horizontal and vertical control, as well as to accurately locate major airport improvements, structures and topographic features.

In the following narrative, each facility has been assigned a general condition rating of "Good", "Fair", or "Poor". A facility rated as "Good" may be assumed to be substantially adequate throughout the 20-year time frame of this study, assuming only normal maintenance. A rating of "Fair" means that the item will probably require major upgrade or replacement at some time during the planning period, but is at least serviceable at the present time. A rating of "Poor" indicates that the item is not adequate for its intended use at the present time.

Airport Pavement Condition

As a part of this Master Plan, a pavement condition survey was conducted by ATL, Inc. (ATL Job No. 197040). The survey was conducted following the guidelines contained in FAA Advisory Circular 150/5380-6. It was completed on July 10, 1997.

In general, the airport's pavements are in Good to Fair condition, with the exception of some PCC and asphaltic concrete pavements in the terminal area.

The condition of the various existing pavements is summarized on Figure 1-4, Airport Pavement Condition Index Map, at the end of this section.

Runway 11-29

The center 75 feet of Runway 11-29 was reconstructed in 1991 and was found to be in Good condition, with Pavement Condition Index (PCI) averaging 87.5 (the ATL report refers to this condition as "Excellent"). The surface course is an asphaltic concrete with early stages of longitudinal and transverse cracking. The new asphaltic concrete extends to the edges of the runway at the connector taxiways.

Except as noted above, the outside 37½ feet on each side of the new pavement was also reconditioned in 1991 by sealing the cracks and placing a slurry seal on the surface. These outside strips have a surface condition rating of "Good to Fair", according to the ATL report, with an average PCI of 64. Longitudinal and transverse cracking, occasional block cracking, and some isolated small areas of alligator cracking were noted.

Runway 4-22

The center 75 feet of Runway 4-22 was reconstructed in 1994 and has a condition rating of Good (the ATL report categorizes it as "Excellent"), with an average PCI of 92.3. The surface is an asphaltic concrete with early stages of longitudinal and transverse cracking. The new asphaltic concrete extends to the edge of the runway at the connecting taxiways. On the south side of the Runway 11-29 parallel taxiway, the new asphaltic concrete extends the full width of Runway 4-22.

The portion of this runway north of Runway 11-29 was reconstructed for its full width in 1991. Longitudinal and transverse cracking in its early stages was noted. The condition is Good, with an average PCI of 96.

Except as noted above, the outside 37½ feet on each side of the new pavement had the cracks sealed during the 1994 reconstruction and has a condition rating of Fair, with an average PCI of 53.2. The existing crack sealing material appears to be in good condition. Some new longitudinal and transverse cracks, and some small areas of block cracking have occurred since the 1994 crack sealing.

Runway 17-35

Runway 17-35 (which is abandoned) was not included in the ATL condition survey, but was found to be in Poor condition. It is marked as closed.

Runway 11-29 Parallel Taxiway

The Runway 11-29 parallel taxiway and its connector taxiways, except for the 800 feet between Runway 4-22 and the Terminal, were reconditioned in 1991 with crack sealing and placement of a slurry seal. The surface is an asphaltic concrete and has a condition rating of Good, with an average PCI of 87.2 (the ATL report refers to this as "Excellent"). Light longitudinal and transverse cracking were noted.

The 800 feet between Runway 4-22 and the Terminal, along with the connecting taxiway from the apron to Runway 11-29 has a coarse textured chip seal surface with a condition rating of Good, and an average PCI of 69. Considerable block, longitudinal and transverse cracking were noted, along with small areas of bleeding.

Runway 4-22 Parallel Taxiway

Except for the connector taxiway at the abandoned Runway 17-35 location, the Runway 4-22 parallel taxiway and its connector taxiways were reconditioned in 1991 with crack sealing and application of a slurry seal. The surface is an asphaltic concrete with a condition rating of Good, and an average PCI of 81.2 (this is termed "Very Good" in the ATL report). Light longitudinal and transverse cracking were noted, along with small areas of block cracking.

The connector taxiway at Runway 17-35 was also reconditioned in 1991, with a new asphaltic concrete surface. It has a condition rating of Good, and an average PCI of 100 ("Excellent", according to the ATL report). The beginning of longitudinal and transverse cracking was noted along with small areas of surface raveling.

South General Aviation Apron

The South General Aviation Apron and connecting taxiway (constructed in about 1980) has an asphaltic concrete surface which was reconditioned in 1991 with a crack seal and slurry seal application. The condition rating is Fair, with an average PCI of 69.4.

A considerable amount of longitudinal and transverse cracking was noted. Many of the cracks are up to one inch wide. Evidence of possible isolated subgrade failures along the original pavement joints was found.

Aprons and Taxiways in Terminal Area

The aprons and taxiways in the terminal area appear to have been constructed and reconditioned over a period of many years, some dating back to the airport's

beginnings.

There are two Portland Cement Concrete (PCC) areas that cover approximately 40% of the apron area. The remainder is paved with asphaltic concrete.

Of the two PCC areas, one is approximately one year old and was rated in Good condition (the ATL report categorized this as "Excellent"), with an average PCI of 94.8. The other PCC apron is considerably older, possibly constructed when the airport Terminal Building was built in 1929. It was rated as Fair, with an average PCI of 41.5. Most slabs exhibit cracks across their full width with some corner breaks and spalling in evidence. The joints are filled with soil. Some joints are up to three inches wide. Considerable shoving of the adjoining asphaltic concrete pavements has occurred. The storm drain at the north end of the PCC area is approximately three inches higher than the pavement, causing ponding on the pavement.

The asphaltic concrete ramp area between the PCC sections and the TAT Hangar and Terminal Building are rated as Poor, with an average PCI of only 20 (the ATL report classes this area as "Very Poor"). This area exhibits many areas of cracking, raveling and shoving.

The asphaltic concrete general aviation parking area, which was constructed in 1985, received a Good rating, with an average PCI of 75.

The remainder of the asphaltic concrete taxiways and parking apron connections in the terminal area are in Poor condition, with an average PCI of only 18. The taxiways within this area show considerable longitudinal, transverse and block cracking with bleeding covering from 20% to 50% of the surface area.

Automobile Parking and Airport Access Roads

The airport access roads and automobile parking areas were not included as a part of the ATL pavement condition survey. Separate evaluation indicates that these pavements are in generally Fair condition.

AIRPORT DRAINAGE

A visual inspection of the existing airport storm drains and surface drainage features indicates that the system appears to be functional and in generally Good condition. Some of the catch basins in the terminal apron area do not appear to drain properly during periods of intense rain. These features may be undersized, or there may be underlying damage to connector pipes.

The major drainage features are depicted on Figure 1-5, Airport Drainage Map, included at the end of this section.

Airport Lighting and Visual Aids

Airport lighting systems include the Medium Intensity Runway Lighting (MIRL) on Runways 11-29 and 4-22, taxiway guidance signage, and terminal area apron floodlighting.

Existing visual aids include the Visual Approach Slope Indicators (VASI) on the Runway 11, 29 and 22 approaches, the airport rotating beacon, and the Runway End Identifier Lights (REIL) on the Runway 11 and 22 approaches.

The MIRL systems for Runways 11-29 and 4-22, the electrical vault and equipment, and the related taxiway guidance signage were found to be in Poor condition. These are being reconstructed concurrent with the preparation of this Master Plan.

The rotating beacon and apron floodlighting were found to be in Good condition. The VASI and REIL lighting was found to be in Fair condition.

Aviation Fuel Delivery and Storage System

The existing aircraft fueling system consists of two above-ground tanks (100LL and Jet-A) and self-service pumps, located on a service apron northeast of the existing Terminal Building.

The fuel system and service apron were constructed during the preparation of this Master Plan and is in Good condition.

Summary of Major Airport Facilities Condition

The table on the following page is a summary of the condition of the major airport facilities, as found during July of 1997 or as noted.

Detailed narrative regarding the condition of the Terminal Building and T.A.T. Hangar follows the summary table.

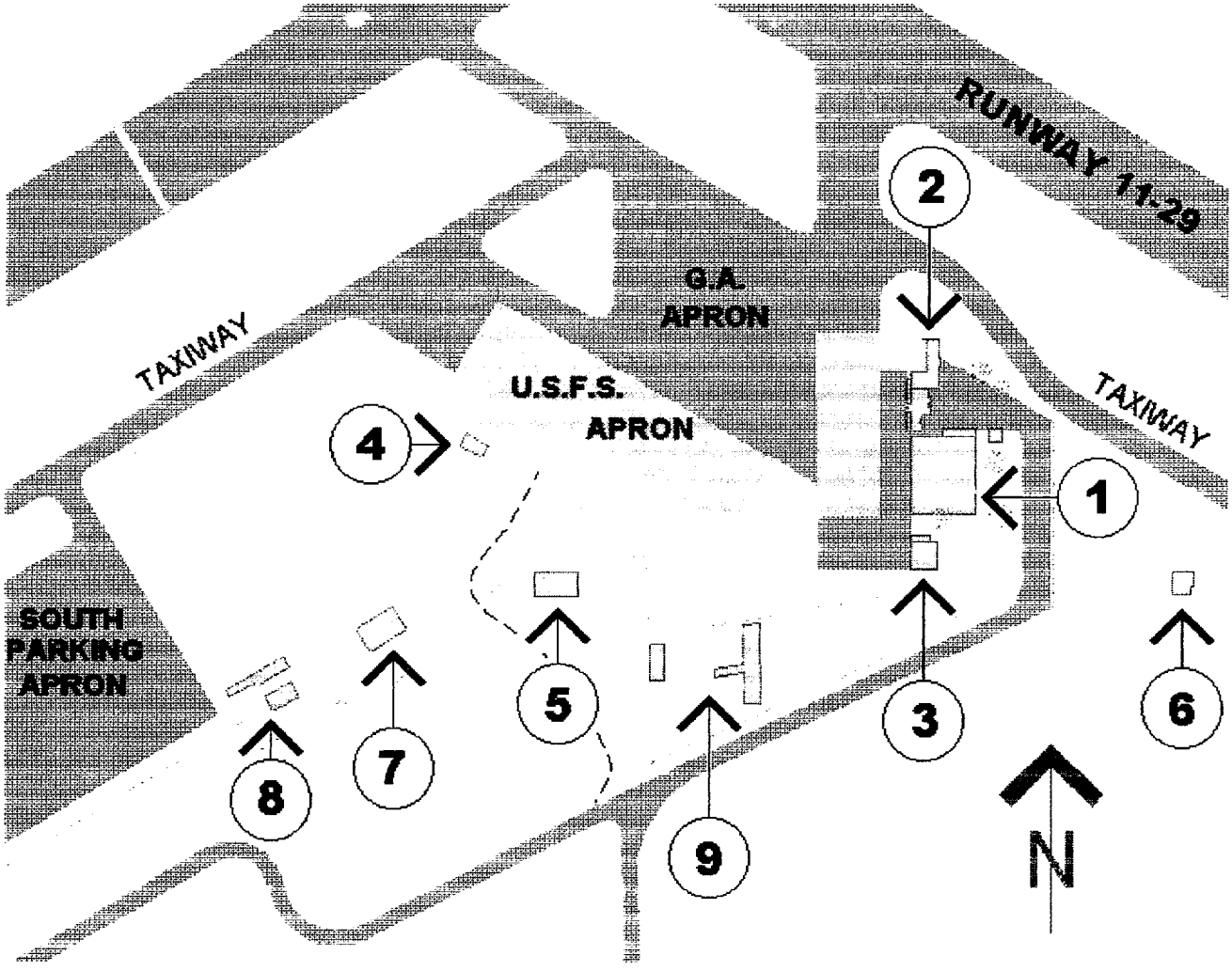
AIRPORT FACILITIES CONDITION SUMMARY
Winslow-Lindbergh Regional Airport - July, 1997

FACILITY	Good	Fair	Poor
Runway 11-29 Pavement			
Runway 4-22 Pavement			
Runway 17-35 (Abandoned) Pavement			
Aircraft Parking Aprons Pavement	←		→
Runway 11-29 Parallel and Connector Taxiways			
Runway 4-22 Parallel and Connector Taxiways			
Airport Access Roads & Auto Parking			
Terminal Building		**	
T.A.T. Hangar		**	
Electrical Equipment Vault Building			***
Runway 11-29 M.I.R.L.			***
Runway 4-22 M.I.R.L.			***
Runway 11 and 22 REIL			
Runway 11, 29 and 22 VASI			
Apron Floodlighting			
Rotating Beacon			
Taxiway Guidance Signs			***
Storm Drains, Culverts & Catch Basins			
Property Line Fencing		←	→
Terminal Area Fencing		←	→
Fuel Storage/Delivery & Service Apron			

← → Indicates an approximate range of condition.

** *Detailed Building Condition Analysis narrative follows for the Terminal Building and T.A.T. Hangar.*

*** *Runway lighting for Rwy 11-29 & 4-22, the electrical vault, and Taxiway guidance signs are being reconstructed concurrent with the preparation of this Master Plan.*



BUILDING AREA KEY MAP

LEGEND

1	T.A.T. Hangar	(see Figure 1-1)	5	U.S. Weather Bureau	(Vacant)
2	Terminal Building and Restaurant	(see Figure 1-2) (see Figure 1-3)	6	Weather Balloon Station	(Vacant)
3	Storage Building		7	U.S. Forest Service	
4	U.S.F.S. Slurry Pits		8	Animal Shelter	
			9	Water Department Yard	(Abandoned)

BUILDING CONDITION ANALYSIS

On July 24, 1997 an architectural investigation of the Terminal/Restaurant Building and the T.A.T. Hangar was undertaken. The purpose of the investigation was to determine the general condition of these two buildings, as well as to identify any apparent structural deficiencies and code compliance issues.

The Terminal and T.A.T. Hangar are potential candidates for funding participation under the Historic Preservation grant system, if restored to substantially represent their original 1929 configurations.

T.A.T. Hangar (Circa 1929)

The T.A.T. (Transcontinental Air Transport) Hangar is a single story structure consisting of approximately 12,700 square feet of floor area. The floor plan layout is illustrated in Figure 1-1 at the end of this section.

This building has been in use continuously for aircraft storage and/or maintenance since its construction in 1929.

The hangar is constructed of steel barrel vaulted trusses spaced at approximately 20 feet on center with steel purlins at approximately 6 feet on center, and intermediates at 2 feet on center.

An expanded box frame system provides lateral shear support at the hangar door end wall at the roof structure. The exterior walls consist of steel framing with decorative metal panels.

A shop area with a separate shed type roof exists at the north side of the building. Access to the interior of the shop was not available during the inspection. Construction appears to be of similar type as the hangar area with the exception of the roof framing. The roof appears to be constructed of steel joists with a plywood roof deck.

A treated wood foundation plate was used to support the metal wall panels and intermediate wall framing at both the hangar and shop areas. The plate at the hangar has a wolmanizing surface. The wood plate at the shop does not, and may be redwood. The plates are in need of replacement, and have pulled away from the foundation in areas. The plate at the shop area shows signs of deterioration from moisture entrapment.

The metal siding panels are in fair shape, and are unique in design. The availability for replacement will require custom manufacturing if the original design is to be preserved. The siding on about one-half of the north wall of the hangar has been replaced with corrugated steel siding, the result of storm damage.

The floor is of concrete slab on grade construction. The condition is poor.

The roof is metal standing seam panels with evidence of leaking. The roofing membrane at the shop area is a built-up bitumen with a mineral surface cap sheet in fair condition, but with evidence of an unstable substrate. Plywood is exposed at the eaves in some locations.

An overhead 100 amp service exists at the northeast corner of the building. The service is relatively new. The telephone box exists at the southeast corner of the building.

Preliminary Renovation Recommendations:

1. Determine the feasibility of Historic preservation.
2. Replace the metal siding panels as needed with panels manufactured to match the existing design. Replace the existing foundation plate with corrosive resistant steel.
3. Reroof the barrel vaulted hangar portion. Provide core samples at the shop area to ascertain the condition and assembly of the substrate. Reroof the shop area per specifications based upon the core sample test results.
4. Remove and replace, or over-pour the existing concrete floor slab.
5. Rebuild the existing hangar door as needed.
6. Paint the hangar exterior and make repairs to windows as needed.

Terminal Building (Circa 1929) and Restaurant Addition

The Terminal/Restaurant Building is a single story structure of approximately 3,600 square feet. The floor plan layouts of the original Terminal and Restaurant addition are illustrated in Figure 1-2 and 1-3 at the end of this section.

The north section of the structure (the Terminal) consisting of approximately 2,100 square feet, was reportedly constructed in 1929, and contains the terminal lobby, airport manager's office, restrooms, a vacant airline check-in counter, and storage rooms. The remaining southern portion (the Restaurant addition) has an approximate age of 40 years.

The Terminal has been in use continuously since its construction in 1929. The Restaurant addition has had several tenants over the years, was vacant since 1993, but has recently been reopened.

Exterior Construction:

The Airport Manager reported that the original section is of adobe construction,

however no evidence of adobe construction was observed during the inspection. Inspections were made of the exterior wall assemblies where possible, without core drilling, at places where the stucco finish had separated, where cracks were visible, or where the assemblies were visible from deterioration. In all cases common brick construction was observed at exterior parapets, the two chimney stacks, and at door and window jambs. This inspection does not rule out the existence of adobe construction. It is possible that the exposed and deteriorating portions of the structure only, are of brick construction (chimneys, parapets, and jambs). Or inferior repairs or modifications could have been made to the structure using alternative materials and resulting in accelerated degeneration at these locations. Core samples are recommended to determine the material content prior to any structural remodeling or renovations. If this structure is to be designated as a Historical building, the existence of adobe will have a significant impact on its acceptance as Historical. Without core samples the exterior wall assemblies are presumed to be of double or triple wall brick construction. The exterior finish is of approximately ½" cement plaster in a heavy skip trowel texture.

The southern addition to the original structure (the restaurant addition) consists of 8"x 4"x 16" concrete masonry units. Joints are struck without any stucco facing. The roof is flat with a mild slope to the front and rear. The roof structure consists of double 2 x 12 construction spaced at approximately 48" o.c. with 1 x 6 and 1 x 8 sheathing, presumably tongue and groove, or ship lap. A frame and stucco vestibule exists on the west side of the addition beneath a covered walkway, which is constructed of cantilevered joists at the south portion.

The original Terminal structure contains a covered walkway which is constructed of 6" to 8" viga poles spaced approximately 30" o.c. with a lattia lath ceiling, and stuccoed parapets supported by exposed wood beams and peeled pole vertical supports with beam corbels.

Differential settlement was observed at the northwest section of the covered walkway. Indicating the absence of adequate post footings or unstable soil conditions.

The north side of the original structure consists of a wood framed enclosure indicating the possibility of existing openings beneath the wood siding.

Roofing:

The roof membrane at the restaurant addition consists of built-up asphalt bitumen with a mineral surface cap sheet in poor condition. Evidence of leaking was visible especially at the covered walkway. Roof slope is adequate.

The roof membrane at the north (Terminal) building portion consists of built-up asphalt bitumen with an emulsion surfacing in poor condition. Scuppers were used at parapet penetrations, without adequate cricketing. Evidence of leaks were observed at

the interior and exterior ceilings.

Roofing core samples are recommended prior to any remodeling or renovation, to ascertain the condition of the substrate, and/or the presence of asbestos in the assembly.

Interior Construction:

Lath and plaster walls and ceilings were observed throughout both building portions, with varying thicknesses at walls. Testing of the existing sheet flooring in the lobby and restrooms, and ceiling tiles is recommended prior to any remodeling or renovations; to verify the presence of asbestos.

Electrical fixtures and receptacles appear to be out dated, no ground fault receptacles were observed. Natural gas exists, and serves the water heating, and central heating systems. Plumbing fixtures and visible piping is outdated. The floor appears to be constructed of slab on grade, with varying levels, and overlays of wood in some areas.

ADA Compliance:

This building was constructed prior to the ADA and the Uniform Building Code requirements for the physically handicapped, and as a result, is in significant noncompliance. The following items should be addressed during building renovation:

1. Ramp approaches to and from the building entrances.
2. Slope of floors at varying heights which exist at the interior.
3. Door entrances and hardware.
4. Restroom fixtures, hardware, and clearances.
5. Signage
6. Telephone and vending accessibility.
7. Parking and accessible routes.

Preliminary Renovation Recommendations:

1. Determine the feasibility of Historic preservation.
2. Restore and repair the existing exterior of the original structure. Remodel the exterior of the addition (the southern masonry portion) to harmonize with the

adobe style of the original building portion. Omit the wood fascia overhangs. Add stepping parapet walls and viga poles. Stucco the masonry walls to match the existing. Add viga poles and muntin windows.

3. Remodel the interior per a specified program.

4. Update and renovate as necessary for ADA compliance.

Electrical Vault Building

The existing electrical vault building is located just east of the northeast corner of the T.A.T. Hangar. It has about 400 square feet of floor area. The walls and roof are of poured concrete construction. The exterior of the vault has a cement plaster finish with a heavy skip trowel surface, with false viga poles. The structure is in fair condition.

This building will be renovated or replaced as a part of the runway lighting and signage project that is being undertaken concurrent with this Master Plan. The electrical equipment in the vault will be replaced with new equipment.

Airport Service Areas

In determining the service area for the Winslow-Lindbergh Regional Airport, it is important to consider the airport's various roles within the regional airport system. While many of the airport facilities are currently designed to accommodate scheduled commercial service, there are no current scheduled airline operations. The present role of the Winslow airport is service to the general aviation community, which includes business travel, sport aviation, and training, as well as private use of light aircraft.

Current FAA planning guidelines for airport siting indicate that a general aviation airport should be located no more than thirty minutes driving time from business, charter and private aircraft users. This is a valid assumption, since the main advantage in flying is the savings in long distance travel time.

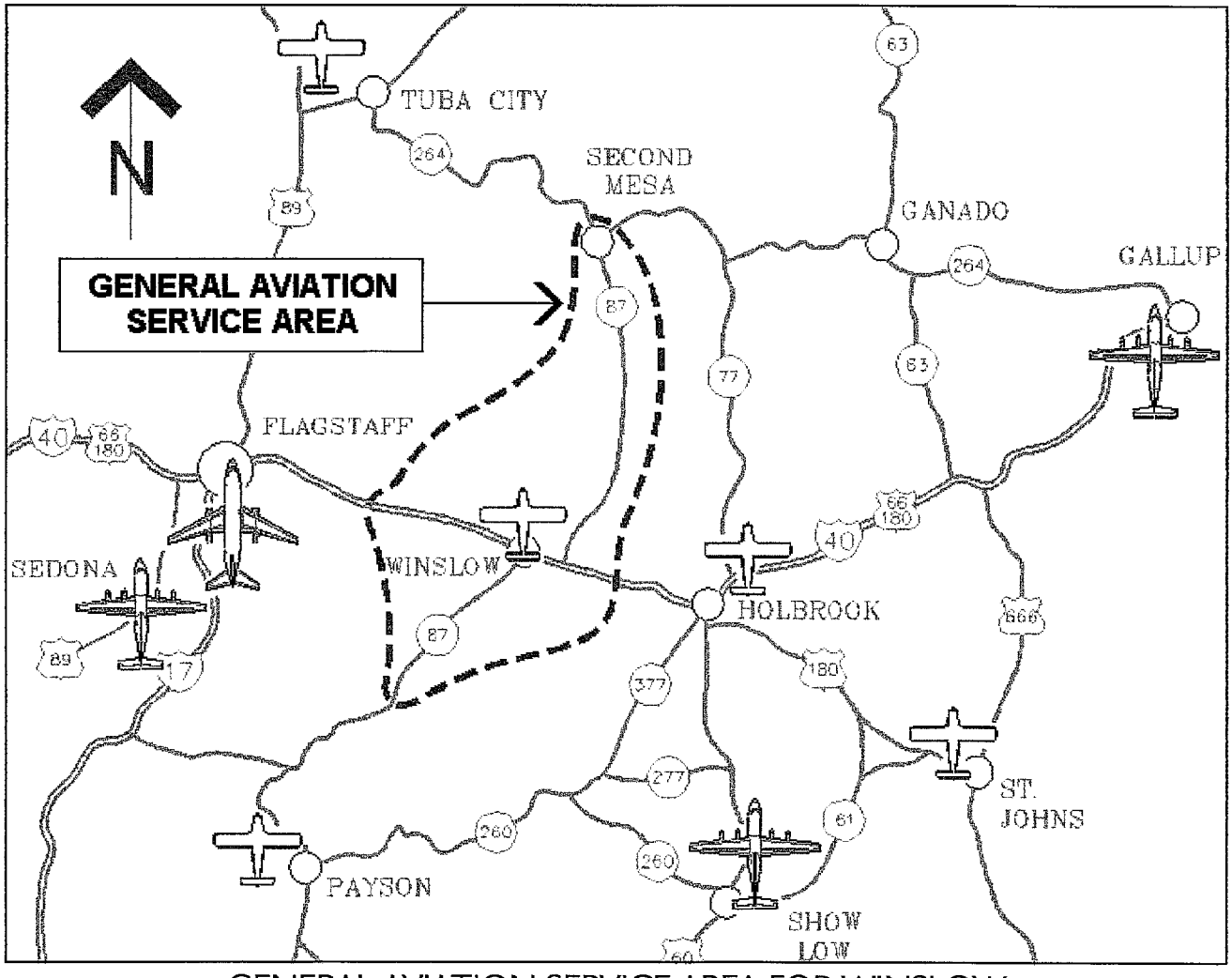
In theory, an airport service area for a particular role or function extends halfway to nearby airports which are capable of serving the same function.

Service areas for scheduled air carriers may typically be much greater (or smaller) in area than for general aviation users, and depend highly upon the level of carrier providing service on specific routes, the condition of the local and national economy and airline fare schedules, as well as many conditions which may be unique to specific locations, such as availability of existing ground transportation options and public sentiment toward the airline providing service.

General Aviation Service Area

In determining the airport's general aviation service area, it was assumed that aircraft owners choose to base their aircraft at the airport which is closest to their residence, which will provide the level of services required by their particular need. All other factors being equal (such as the condition of the airports' facilities) the determining factor in this decision is almost always the length of paved runway which is required by the type of aircraft to be operated.

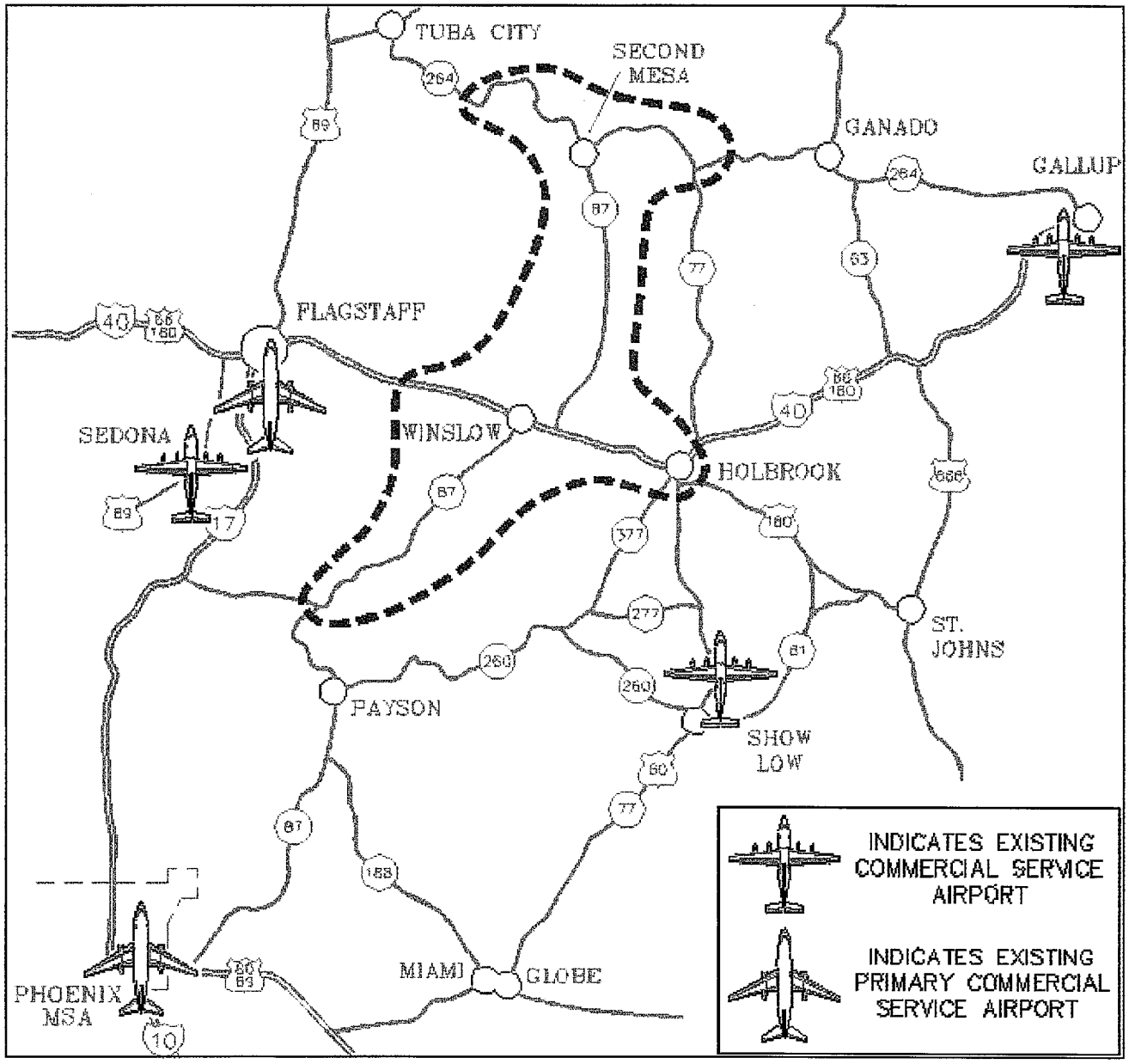
Because the area surrounding the City of Winslow is sparsely populated, the general aviation service area is limited to an area that encompasses the city limits and extending along Interstate 40 to points approximately halfway to Flagstaff and Holbrook. The approximate General Aviation Service Area for Winslow is illustrated on the map below.



GENERAL AVIATION SERVICE AREA FOR WINSLOW

Air Carrier Service Area

The theoretical service area for scheduled air carrier operations, as illustrated below, was developed by connecting equidistant points (based on approximate driving time) between Winslow and the closest competing airports currently providing scheduled service. These are Flagstaff/Pulliam Field (classified as a Primary Commercial Service Airport) to the west, Page, AZ to the north, Gallup, NM to the east, and Show Low, AZ to the southeast. The closest of these is Flagstaff, which is about 60 miles away.



THEORETICAL AIR CARRIER SERVICE AREA MAP FOR WINSLOW

The actual air carrier service area will vary with changes in the economy and other local and regional factors. For example, at the present time most travelers residing in Winslow who require long haul airline service will most probably drive to Phoenix to make their flight, rather than drive a lesser distance to Flagstaff for a short haul connector flight. This is primarily an economic decision, based upon the currently available levels of service and fares. It is assumed that this would also affect the passenger volume, if commuter service were available at Winslow.

The service area presented in the illustration above, then, represents the *theoretical maximum achievable air carrier service area* for Winslow, under assumed prime conditions, if limited only by geographic constraints.

The following is a list of some representative multi-engined turboprop commuter airliners and jet airliners which could be accommodated at Winslow, based on the present Runway 4-22 maximum length of 7,500' at a density altitude of 8,000 feet (4,937' MSL and 94°F).

REPRESENTATIVE AIR CARRIER AIRCRAFT
WHICH COULD BE ACCOMMODATED AT WINSLOW
(7,500' Runway Length and 94°F)

Model	AppSpeed	WingSpan	Toweight	RWlength
DHC-7	86	93.00	44,000	4,300
DHC-8-100	94	85.00	34,400	5,250
Gulfstream I	113	78.30	34,000	6,900
Merlin IVC	113	57.00	16,000	6,300
Metro III	112	46.20	16,000	6,600
Saab 340B	104	70.33	25,000	4,850
Saab-Fairchild SF 340A	104	70.33	28,000	7,250
Metro II SA226-TC	112	46.25	12,500	4,650
Embraer EMB-120	108	64.90	25,353	7,025
Boeing 767-200 JT9D	130	156.08	280,000	6,800
Boeing 767-200 PW4052	130	156.08	280,000	6,700
Boeing 767-300 PW4052	130	156.08	280,000	6,750
DC-9-11 JT8D-1	134	89.40	77,750	7,250
Gulfstream IV	145	77.80	65,000	7,400

Source: AcData v6.10

AIRSPACE

The Winslow-Lindbergh Regional Airport airspace is illustrated in Figure 1-6 at the end of this section.

The Winslow airport is located beneath as area of Class G (uncontrolled) airspace.

Military Operations Areas (MOA's) are designed to confine military training operations within a specific area. They are not restricted airspace. Therefore, civilian pilots may transit an MOA, but should maintain radio communications with the controlling entity (Albuquerque Center in this case). The Sunny MOA is located about 25 nautical miles north of the Winslow airfield, and includes the airspace from 12,000 feet MSL up to but not including Flight Level 180 (18,000 feet).

Restricted Areas may not be entered by civilian aircraft without specific permission from the controlling entity. The nearest Restricted Area, R-2302, is located about 65 nautical miles west of Winslow. This area encompasses a small circular area that extends from the surface up to and including 10,000 feet MSL. The area is controlled by Albuquerque Center.

Two Military Training Routes, IR276-320 and IR112, transit the airspace adjacent to Winslow. These routes pass within about 15 nautical miles south of the airport.

Several Victor Airways converge at the nearby Winslow VORTAC (INW, frequency 112.6). These include major routes from Las Vegas, Phoenix, Los Angeles (via Needles), and Denver (via Albuquerque). Minimum enroute altitudes for IFR traffic along these routes varies between 8,700 feet and 10,000 feet MSL over Winslow.

No apparent conflicts between the existing activity at Winslow and the present airspace structure and use have been noted.

WIND DATA ANALYSIS

The overall operational safety of an airport is affected by the direction of its runways in relationship to the prevailing wind. In general terms, smaller aircraft are affected more by wind, although wind conditions will affect operation of any aircraft to some degree. Crosswinds are often a contributing factor in light aircraft accidents. Therefore, orientation of the runway such that it is aligned with the prevailing wind for the greatest percentage of the time will add substantially to the safety and usefulness of the airport.

The *crosswind component* of wind direction and velocity is defined as the resultant vector which acts at right angles to the runway centerline, and is equal to the wind velocity multiplied by the sine of the angle between the wind direction and the runway direction.

Wind coverage is defined as the percentage of the time that the crosswind components

are below an acceptable velocity. These acceptable velocities vary with the airport's design Airport Reference Code (ARC), as follows:

Acceptable Crosswind Components
for Various Airport Reference Codes (ARC)

ARC A-IV through D-VI	20.0 knots
ARC A-III, B-III, and C-I through D-III	16.0 knots
ARC A-II and B-II	13.0 knots
ARC A-I and B-I	10.5 knots

Source: FAA AC 150/5300-13, Appendix 1

The most desirable runway orientation based on wind is the one which has the greatest wind coverage. The FAA recommends a minimum wind coverage of 95%. If a single runway cannot meet this criteria, a crosswind runway is recommended, aligned such that the total wind coverage for the two runways will be at least 95%.

The Winslow Airport currently has two active runways, 11-29 and 4-22. There is also one abandoned runway which is not usable due to its condition (Runway 17-35).

Digital wind data collected at the Winslow-Lindbergh Regional Airport for the 1986 through 1995 period was used in the wind analysis for this study. The source of the data was the National Climatic Data Center in Asheville, North Carolina.

Based on examination of the current usage, the airport's maximum potential design Airport Reference Code is ARC C-II. However, the airfield will be used by a wide range of aircraft types, including those in the ARC A-I, B-I, and B-II categories. Wind will potentially have the greatest effect on the safety of operations of the lighter aircraft types.

In order to form an accurate basis for runway development recommendations, three separate wind data analyses were undertaken for each of the active and inactive runway alignments and for the various combinations of potential dual-runway systems, considering both the 16-knot (for ARC C-II), 13-knot (for ARC B-II), and 10.5-knot (for ARC A-I/B-I) situations, as follows:

1. Annual/All-Weather data analysis.

2. Favored Runway Direction analysis using the Annual/All-Weather data.

Because of the fairly common occurrence of high wind conditions in the Winslow area, a High-Wind analysis (considering only winds over 16 knots) was also performed for each single- and dual-runway combination and for each runway direction.

The resulting wind coverages were computed using the FAA's Airport Design Wind Analysis software. The results of the computations described below are tabulated on pages 1-25 and 1-26.

10.5-knot Analysis

The results of the 10.5 knot wind analysis indicate that only Runway 4-22 will provide the recommended 95% coverage when considered by itself, in a standard FAA analysis of annual data (95.86%). Neither Runway 11-29 or 17-35 would meet the 95% threshold. Runway 11-29 yields only 89.93%, and 17-35 yields 92.41% coverage at 10.5 knots.

Analysis of the various dual-runway combinations indicates that any combination will provide coverage over the FAA recommended 95% threshold. The best 10.5 knot coverage would be provided by Runway 4-22+17-35 (98.61%). Analysis of the current dual-runway combination of 4-22 and 11-29 yields 10.5-knot coverage of 98.31%.

13-knot Analysis

The results of the 13-knot analysis indicate that Runway 4-22 is the favored single runway, with 97.66% coverage. Runway 11-29 will not provide the recommended 95% coverage, yielding only 93.48%. Runway 17-35 would provide 95.80% coverage.

The dual-runway combination of 4-22+17-35 yields 13-knot coverage of 99.52%, followed closely by 4-22+11-29 at 99.33%. Analysis considering that all runways are active (11-29, 4-22 and 17-35) yields 13-knot coverage of 99.98%.

16-knot Analysis

When these results of the 16-knot analysis are examined, it becomes apparent that there is little difference in relative wind coverage between various single runways or combinations. Any of the single-runway or dual-runway choices result in coverage of over 96%. Most are over 99%. Analysis considering that all runways are active (11-29, 4-22 and 17-35) yields 16-knot coverage of 100%. The best dual-runway combination is 4-22+17-35, which yields 99.87% coverage.

Analysis of the current dual-runway combination of 4-22 and 11-29 yields 16-knot coverage of 99.77%.

High Wind (greater than 16-knots) Analysis

Obvious differences are apparent when the results of the High-Wind analysis are compared. Runway 4-22 is by far the best single-runway alignment when the wind is over 16 knots, with coverage of 83.35%. Runway 17-35 follows with 67.02% coverage. High wind coverage on Runway 11-29 is fairly poor in comparison, with 33.32% coverage.

The dual-runway combination of Runways 4-22 + 17-35 would provide the best High Wind analysis coverage (97.14%). The combination of the two currently active runways (11-29 and 4-22) yields High-Wind coverage of 94.82%.

Favored Runway Direction Analysis

The favored direction appears to vary between Runway 22 and 17, depending upon the wind velocity. Runway 22 is favored to provide 16-knot coverage and when the wind velocity is over 16 knots. Runway 17 is favored to provide 10.5- and 13-knot coverage.

Winslow-Lindbergh Regional Airport - Results of Wind Data Analysis

Favored Runway Direction Analysis

Runway	10.5-knot	13-knot	16-knot	Over 16 knots
04	35.83%	36.36%	36.91%	1.23%
22	61.49%	62.77%	**63.75%**	**82.12%**
11	42.47%	43.16%	43.95%	3.53%
29	48.94%	51.79%	54.39%	29.79%
17	**64.42%**	**67.17%**	61.75%	58.21%
35	29.47%	30.10%	30.60%	8.81%

(The best wind coverages in each column are indicated in **bold** *text)*

Wind Data Source: Winslow-Lindbergh Regional Airport records for 1986 through 1995, from National Climatic Data Center, Asheville, NC

(Calculations made using the FAA Wind Analysis Software)

Winslow-Lindbergh Regional Airport - Results of Wind Data Analysis

Single-Runway Analysis

Runway	10.5-knot	13-knot	16-knot	Over 16 knots
4-22	**95.86%**	**97.66%**	**99.18%**	**83.35%**
11-29	89.93%	93.48%	96.86%	33.32%
17-35	92.41%	95.80%	98.45%	67.02%

Dual-Runway Combinations

Runway	10.5-knot	13-knot	16-knot	Over 16 knots
4-22+11-29	98.31%	99.33%	99.77%	94.82%
11-29+17-35	95.59%	98.10%	99.31%	84.46%
4-22+17-35	**98.61%**	**99.52%**	**99.87%**	**97.14%**
4-22+11-29+17-35	99.83%	99.98%	100%	99.98%

(The best wind coverages in each column are indicated in **bold** *text)*

Wind Data Source: Winslow-Lindbergh Regional Airport records for 1986 through 1995, from National Climatic Data Center, Asheville, NC

(Calculations made using the FAA Wind Analysis Software)

Existing Airport Land Use

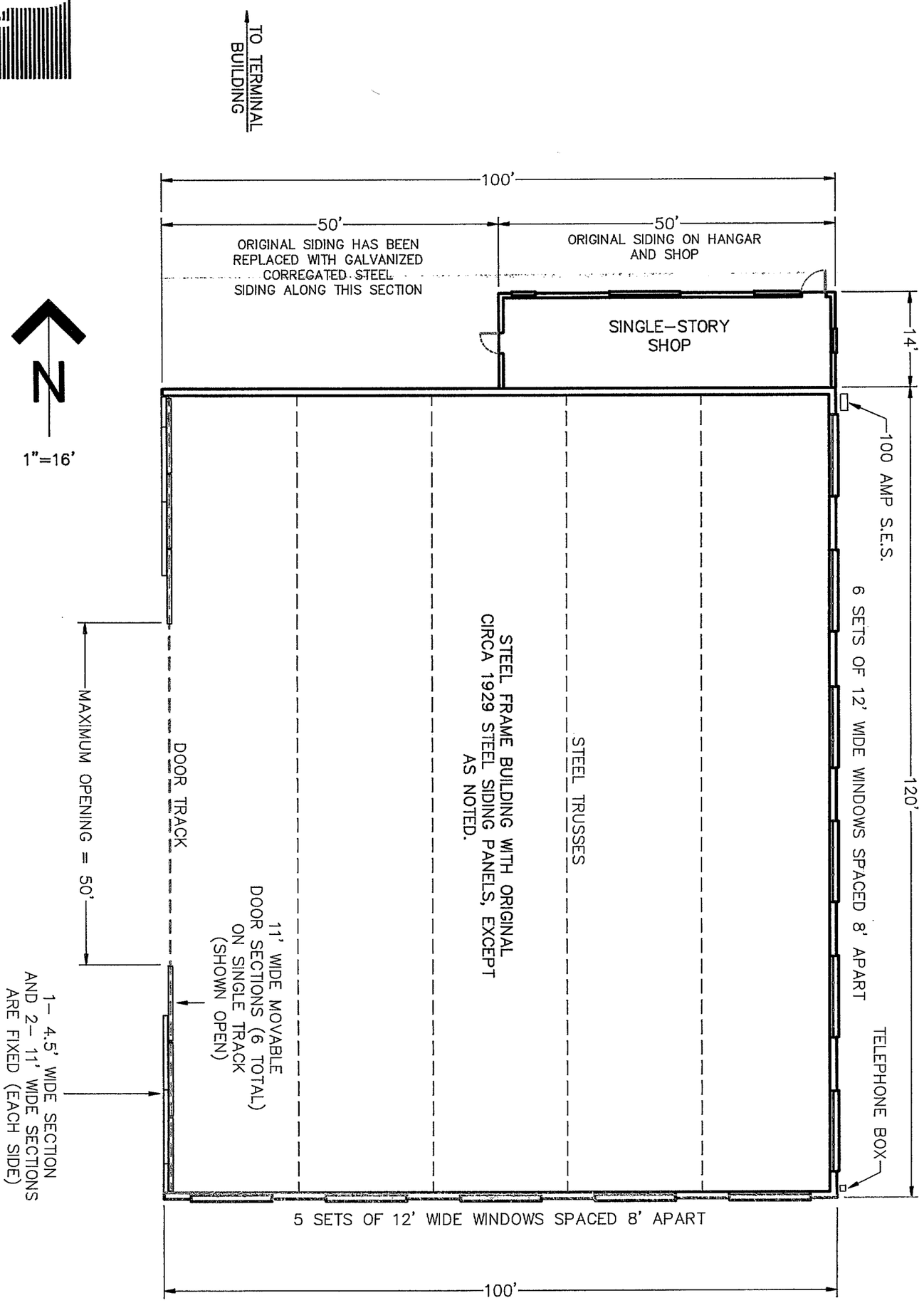
The present land uses and zoning of the land adjacent to the airport are shown in summary on Figure 1-9, Airport Land Use Map at the end of this section. The Airport Layout Plan, which is included at the end of Section 8 of this report, also includes an Airport Area Land Use Drawing which shows the existing land use zoning for an extended area around the airport.

All of the existing airport land is currently in aviation-related use. (The Restaurant is a possible exception to this, but may be considered to be an aviation support service business).

The entire airport property is currently zoned for industrial use, as is the adjacent land to the east and southeast. Land to the west of the airport is zoned for low-density residential use, but is currently undeveloped.

The land immediately to the north of the airport property is primarily commercial and industrial use, with the exception of a high-density residential subdivision that is located immediately northeast of the end of Runway 22. This subdivision is within the Runway Protection Zone (RPZ) for the Runway 22 approach and, as such, is considered to be an incompatible land use.

Revised: December 19, 1997

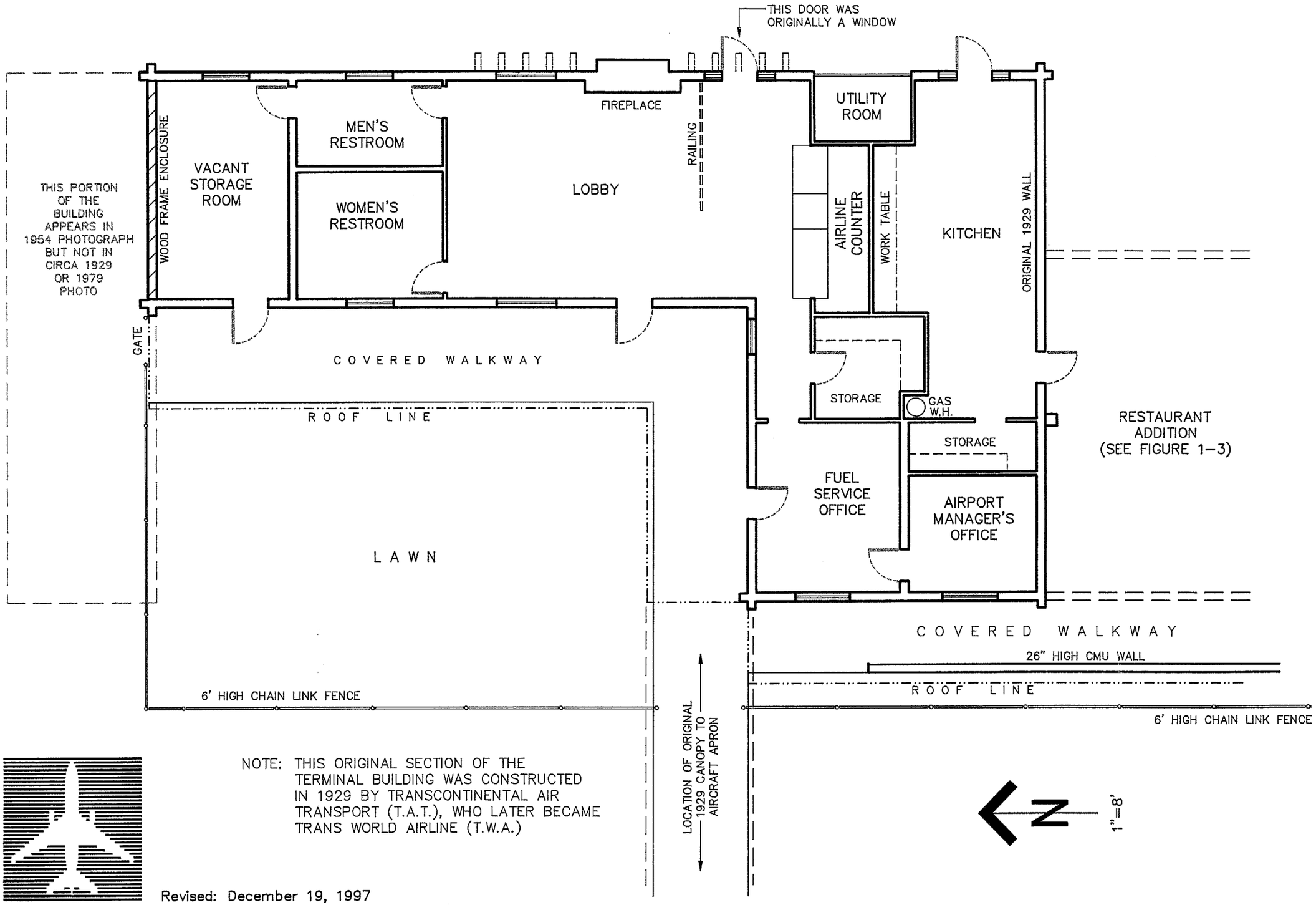


Winslow-Lindbergh Regional Airport Master Plan 1998
1929 T.A.T. HANGAR FLOOR PLAN

FIGURE 1-1

Winslow-Lindbergh Regional Airport Master Plan 1998
1929 T.A.T. TERMINAL - ORIGINAL SECTION

FIGURE 1-2



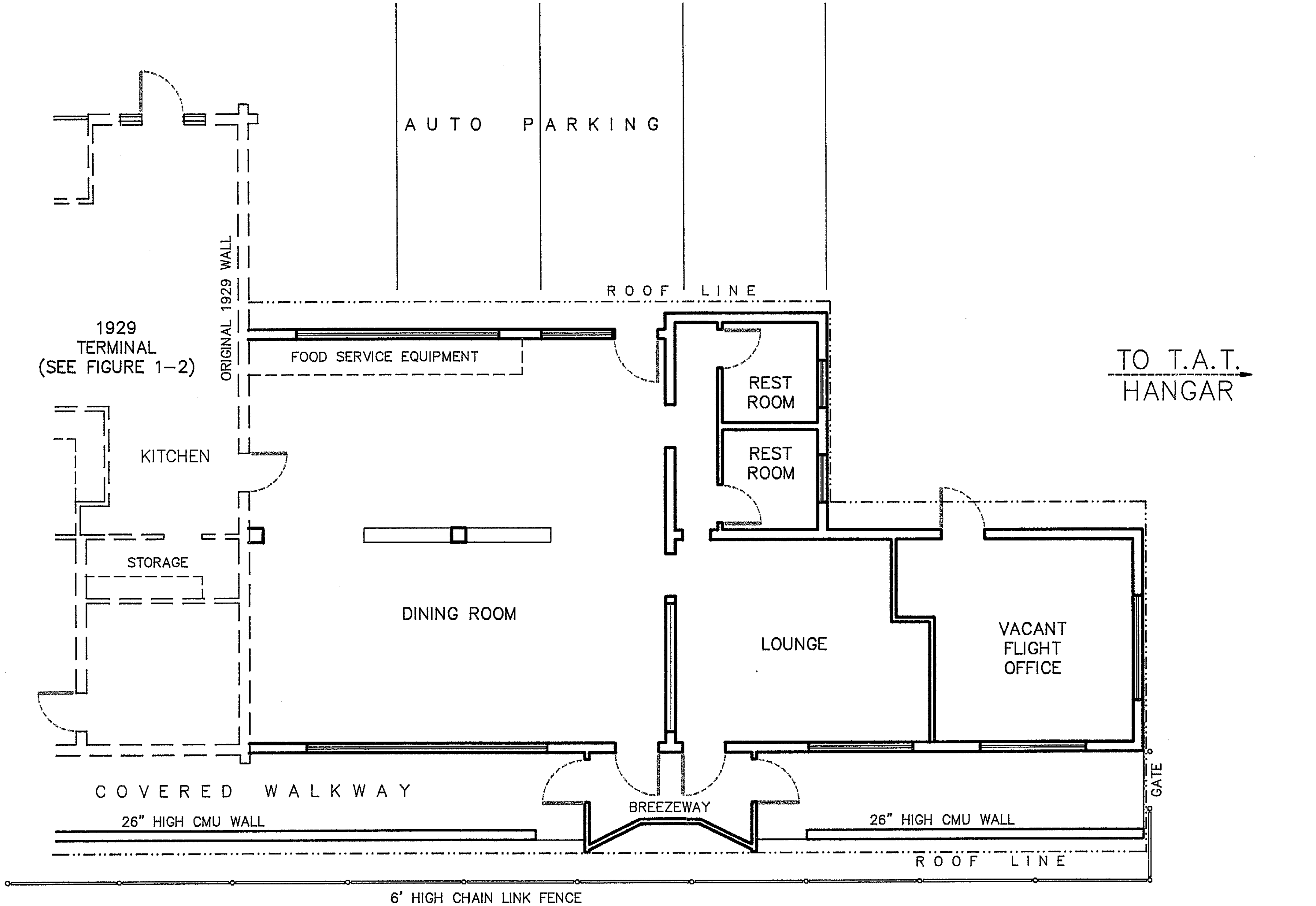
NOTE: THIS ORIGINAL SECTION OF THE TERMINAL BUILDING WAS CONSTRUCTED IN 1929 BY TRANSCONTINENTAL AIR TRANSPORT (T.A.T.), WHO LATER BECAME TRANS WORLD AIRLINE (T.W.A.)

Revised: December 19, 1997

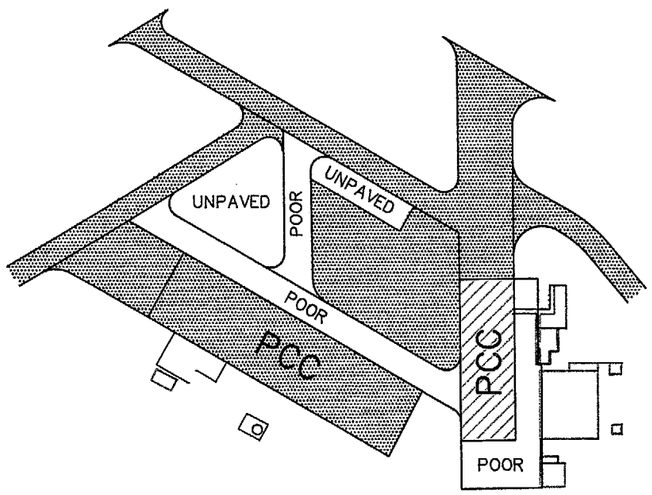
Winslow-Lindbergh Regional Airport Master Plan 1998

TERMINAL BUILDING - RESTAURANT ADDITION

FIGURE 1-3



Revised: December 19, 1997

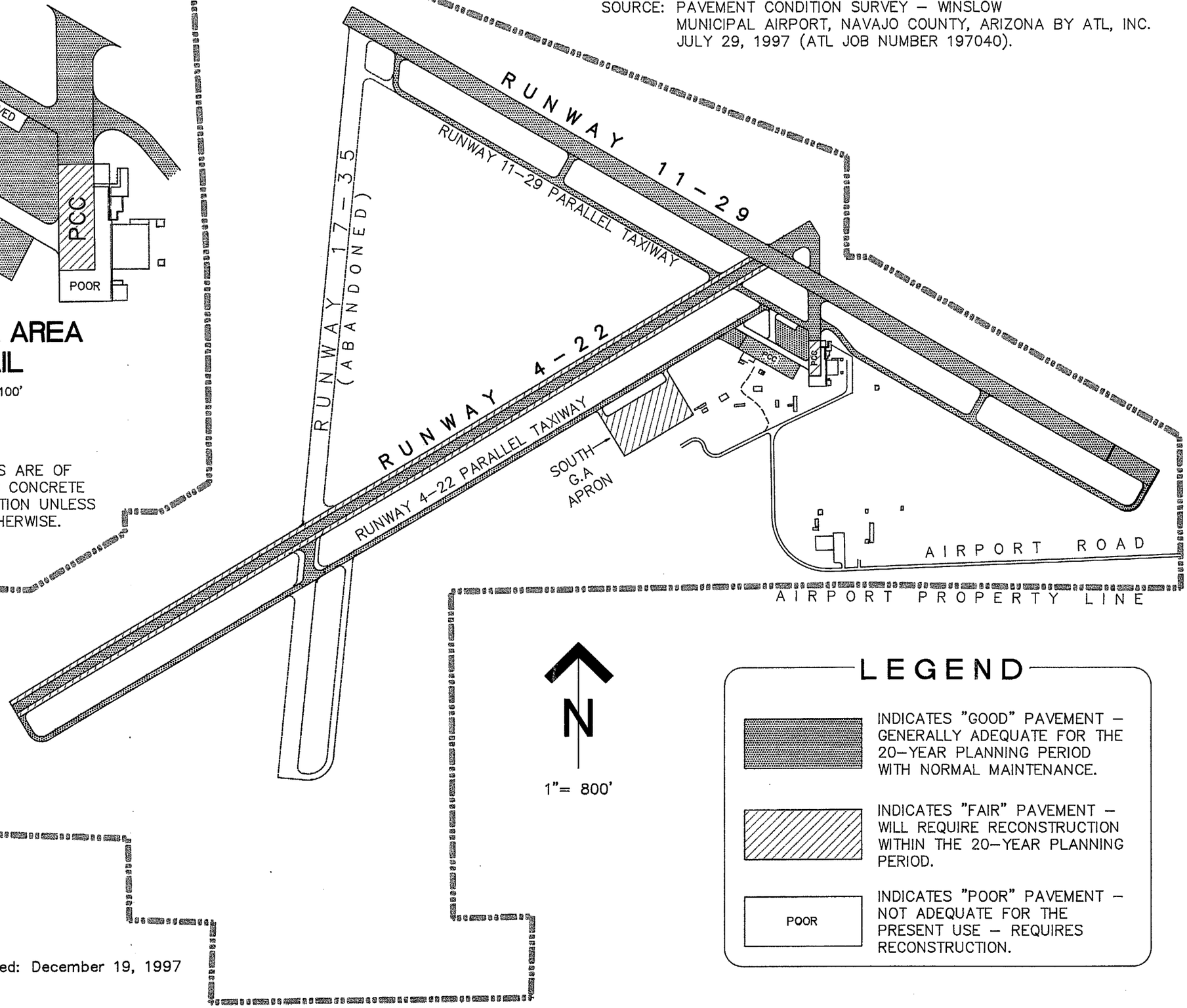


TERMINAL AREA DETAIL

SCALE: 1"=100'

NOTE: PAVEMENTS ARE OF ASPHALTIC CONCRETE CONSTRUCTION UNLESS NOTED OTHERWISE.

SOURCE: PAVEMENT CONDITION SURVEY – WINSLOW MUNICIPAL AIRPORT, NAVAJO COUNTY, ARIZONA BY ATL, INC. JULY 29, 1997 (ATL JOB NUMBER 197040).



N

1"= 800'

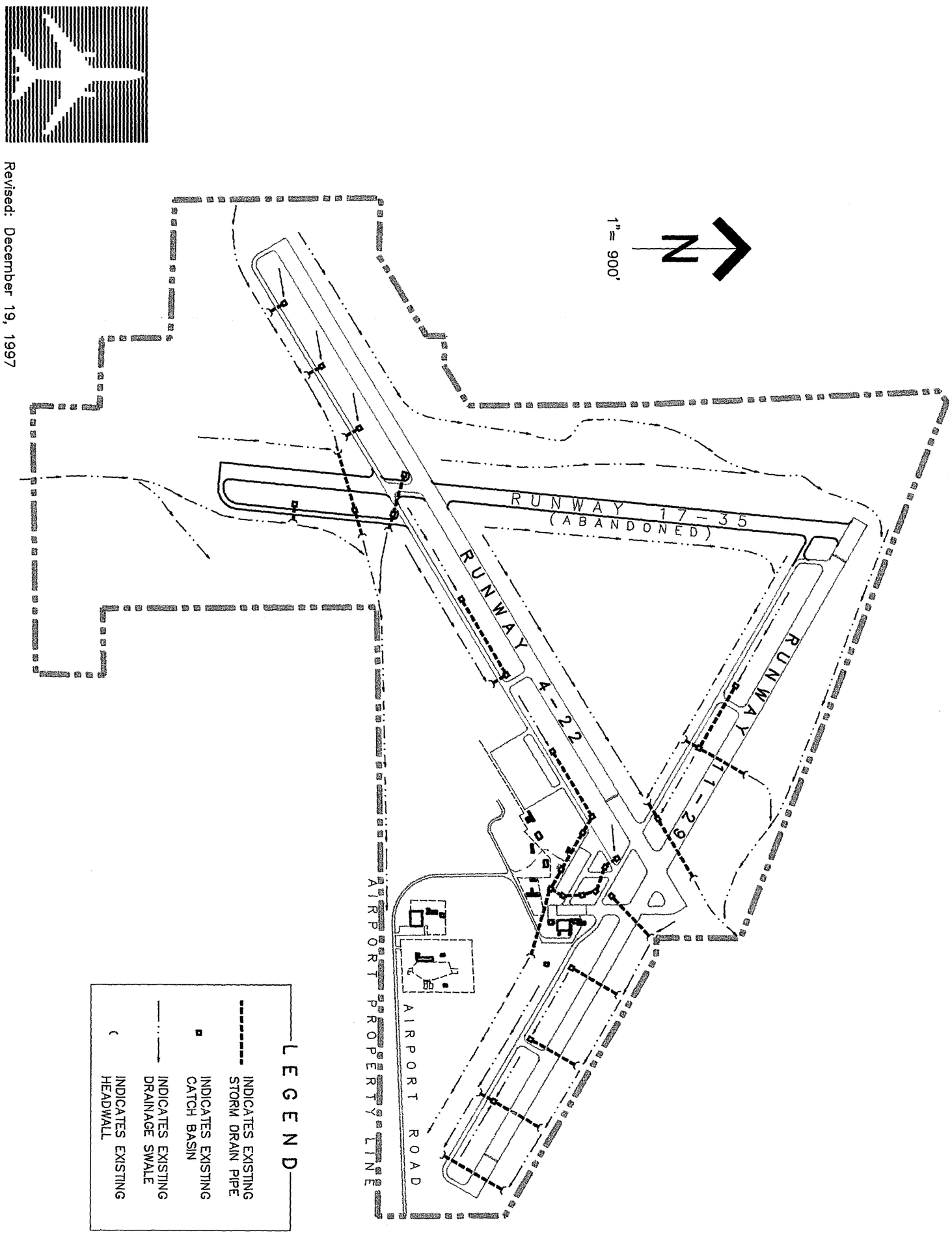
LEGEND

- INDICATES "GOOD" PAVEMENT – GENERALLY ADEQUATE FOR THE 20–YEAR PLANNING PERIOD WITH NORMAL MAINTENANCE.
- INDICATES "FAIR" PAVEMENT – WILL REQUIRE RECONSTRUCTION WITHIN THE 20–YEAR PLANNING PERIOD.
- POOR — INDICATES "POOR" PAVEMENT – NOT ADEQUATE FOR THE PRESENT USE – REQUIRES RECONSTRUCTION.

Revised: December 19, 1997

Winslow–Lindbergh Regional Airport Master Plan 1998
AIRPORT PAVEMENT CONDITION INDEX MAP

FIGURE 1–4



Revised: December 19, 1997

Winslow-Lindbergh Regional Airport Master Plan 1998
AIRPORT DRAINAGE MAP

FIGURE 1-5

Winslow-Lindbergh Regional Airport Master Plan 1998
AIRSPACE MAP

FIGURE 1-6

LEGEND

- INDICATES PUBLIC-USE AIRPORT (IMPROVED)
- INDICATES PRIVATE OR UNIMPROVED AIRPORT
- INDICATES RESTRICTED USE AIRSPACE
- V 208 — INDICATES VICTOR AIRWAY
- IR112 — INDICATES MILITARY TRAINING ROUTE

GRAND CANYON NATIONAL PARK SPECIAL FLIGHT RULES AREA

GCN GRAND CANYON

TBC TUBA CITY

SUNNY MOA
12,000' TO BUT NOT INCL FL 180

ROCKY RIDGE

PINON

CHINLE

POLACCA

VALLE

TOYEI SCHOOL

GANADO

WINDOW ROCK

GREASEWOOD

TRANSWESTERN #4

GUP GALLUP

WILLIAMS

TRANSWESTERN #3

R 2302

FLG FLAGSTAFF

INW WINSLOW

HOLBROOK

BLACK ROCK

ZUN NAVAJO #5

SEDONA

DRK PRESCOTT

COTTONWOOD

RIMROCK

CAMP VERDE

ORME SCHOOL

CORDES

PAYSON

MOGOLLON

TAYLOR

WHITE MTN LAKE

SHOW LOW

ST. JOHNS

SJN

SPRINGERVILLE

PLEASANT VALLEY

CAREFREE

DEER VALLEY

SCOTTSDALE

LUKE AF 1

LUKE AFB

GLENDALE

PAPAGO AAF

PHOENIX

PXR

FALCON

PHOENIX CLASS B AIRSPACE

GRAPEVINE

WHITERIVER

JACKAL MOA
11,000' MSL OR 3,000' AGL
(WHICHEVER IS HIGHER)
TO BUT NOT INCLUDING FL 180

OUTLAW MOA
8,000' MSL OR 3,000' AGL
(WHICHEVER IS HIGHER)
TO BUT NOT INCLUDING FL 180

SAN CARLOS

GLOBE

COMPASS ROSE INDICATES LOCATION OF AN EXISTING VOR, VORTAC OR VOR/DME TRANMITTER.

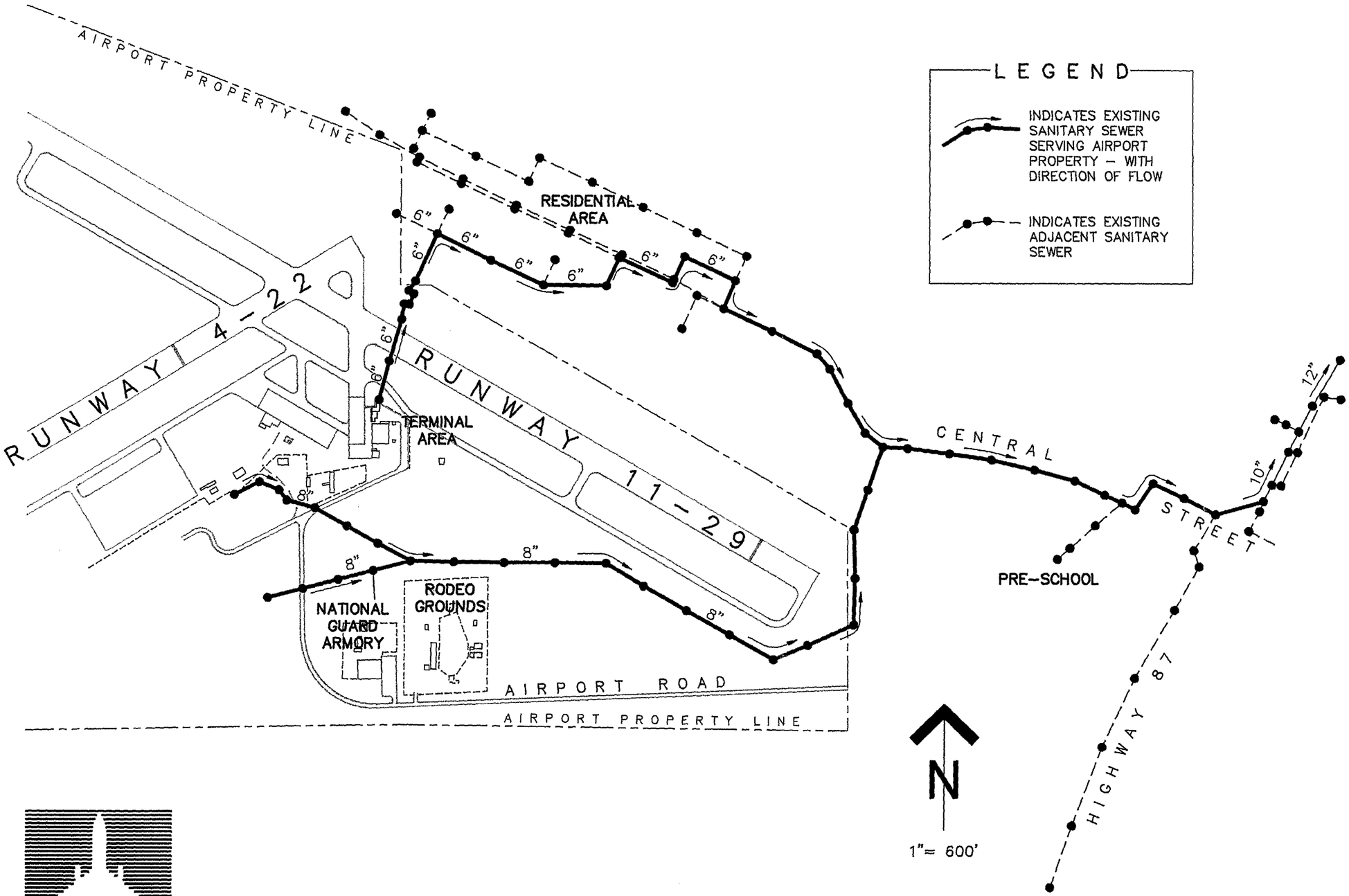
N

1"= 20nm

Revised: December 19, 1997

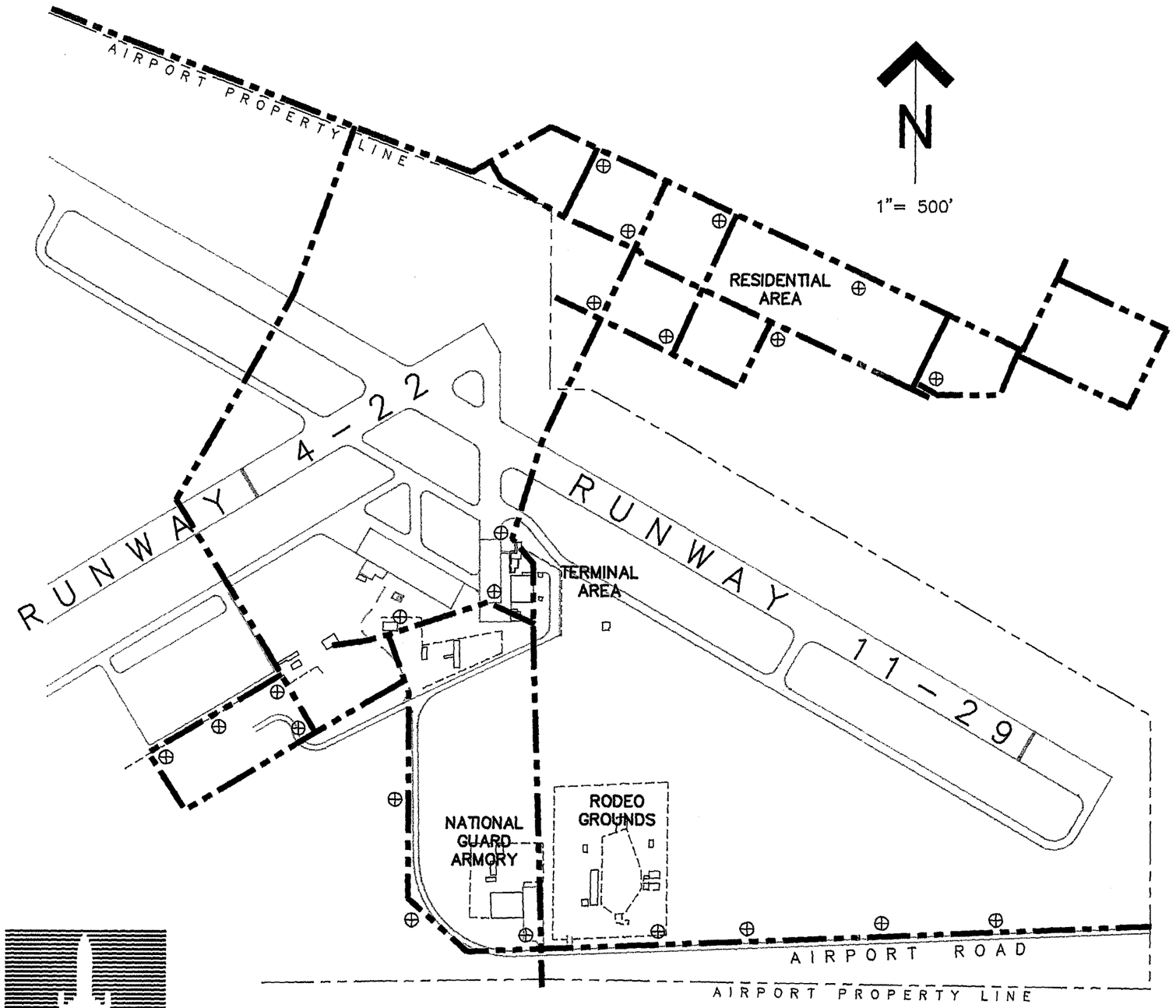
Winslow-Lindbergh Regional Airport Master Plan 1998
AIRPORT SANITARY SEWER MAP

FIGURE 1-7



Revised: December 19, 1997

SOURCE: CITY OF WINSLOW MAPPING



LEGEND

INDICATES EXISTING WATER LINE

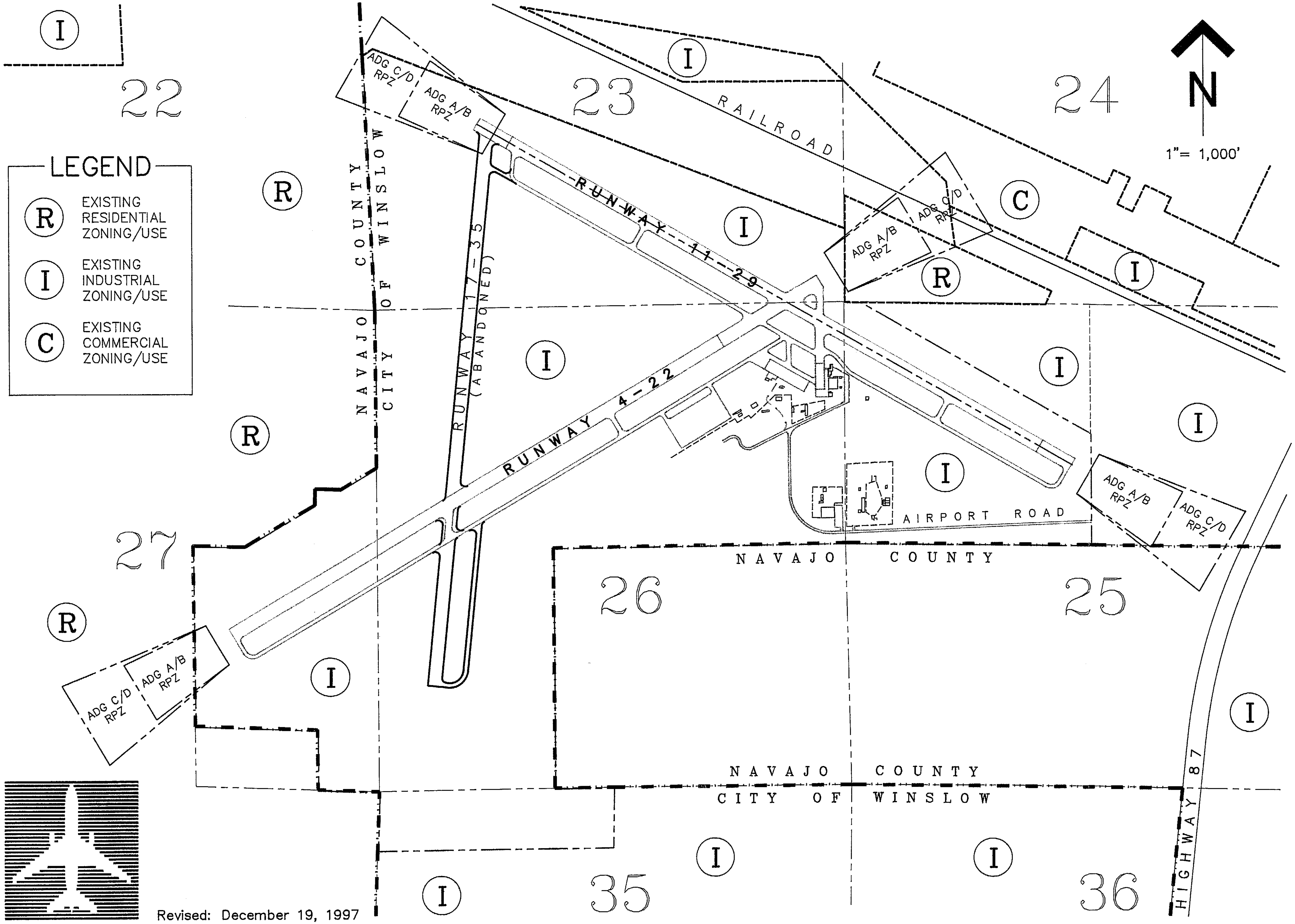
⊕ INDICATES EXISTING FIRE HYDRANT

Revised: December 19, 1997

SOURCE: CITY OF WINSLOW MAPPING

Winslow-Lindbergh Regional Airport Master Plan 1998
AIRPORT WATER SYSTEM MAP

FIGURE 1-8



Revised: December 19, 1997

Winslow-Lindbergh Regional Airport Master Plan 1998

AIRPORT LAND USE MAP

FIGURE 1-9